

CLAIMS

1. A catalyst for purifying exhaust gases, comprising:
a support comprising at least an oxide comprising cerium;
and
a catalytic ingredient loaded on the support; and
exhibiting a value of an oxygen sorbing amount with respect to a heat capacity, an oxygen sorbing amount/heat capacity value, falling in a range of from 4×10^{-3} to 8×10^{-3} ($\text{g} \cdot \text{J}^{-1} \cdot \text{K}$).
2. The catalyst set forth in claim 1, wherein the oxygen sorbing amount/heat capacity value falls in a range of from 5×10^{-3} to 7×10^{-3} ($\text{g} \cdot \text{J}^{-1} \cdot \text{K}$).
3. The catalyst set forth in claim 1 or 2, wherein the oxide comprising cerium is a composite oxide comprising ceria.
4. The catalyst set forth in claim 3, wherein the composite oxide further comprises zirconia.
5. The catalyst set forth in claim 4, wherein the composite oxide has a Ce/Zr atomic ratio falling in a range of from 1/9 to 9/1.
6. The catalyst set forth in either one of claims 3 through 5, wherein the composite oxide further comprises at least one element selected from the group consisting of rare-earth elements except cerium.

7. The catalyst set forth in claim 6, wherein an amount of the at least one element is from 5 to 20% by weight as oxide with respect to the composite oxide.

8. The catalyst set forth in claim 6 or 7, wherein the at least one element is selected from the group consisting of La, Pr, Nd and Sm.

9. The catalyst set forth in claim 8, wherein the at least one element is selected from the group consisting of La and Pr.

10. The catalyst set forth in either one of claims 1 through 9, wherein the support further comprises a porous oxide.

11. The catalyst set forth in claim 10, wherein the porous oxide is alumina.

12. The catalyst set forth in either one of claims 1 through 12, wherein the catalytic ingredient in amount of from 20 to 100% by weight thereof is loaded on the oxide comprising cerium.

13. A method of evaluating a purifying ability of a catalyst in low temperature regions, the catalyst comprising a support comprising at least an oxide comprising cerium, and a catalytic ingredient loaded on the support, the method comprising the steps of:

assuming a heat capacity and an oxygen sorbing amount of

the catalyst; and

evaluating the low-temperature purifying ability of the catalyst to be excellent when a value of the oxygen sorbing amount with respect to the heat capacity, an oxygen sorbing amount/heat capacity value, falls in a range of from 4×10^{-3} to 8×10^{-3} ($\text{g} \cdot \text{J}^{-1} \cdot \text{K}$).

14. The method set forth in claim 13, wherein the low-temperature purifying ability of the catalyst is evaluated to be more excellent when the oxygen sorbing amount/heat capacity value falls in a range of from 5×10^{-3} to 7×10^{-3} ($\text{g} \cdot \text{J}^{-1} \cdot \text{K}$).